# HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF
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**Influence of Ozone on Bacteria.**—In view of the inconsistent results arrived at by a number of experimenters on the bactericidal influence of ozone, DR. ARTHUR RANSOME and MR. A. G. R FOULERTON (*Public Health*, July, 1901, p. 684) undertook to investigate the subject anew, in the hope of coming to a definite conclusion with especial reference to the availability of this agent as a room disinfectant. The experiments were planned to ascertain whether ozone applied in large quantities, mixed with atmospheric air or pure oxygen, has a true bactericidal influence, and included tests of its action on the vitality of certain pathogenic and saprophytic bacteria and on the virulence of one pathogenic species (B. tuberculosis). The organisms employed in the several experiments included the following: B. tuberculosis, B. mallei, B. diphtheriæ, B. anthracis (sporing), B. typhosus, micr. melitensis, micr. candicans, B. coli communis, B. pyocyaneus, B. pneumoniæ (Friedländer), B. prodigiosus, staph. pyogenes aureus, str. pyogenes, saccharomyces albicans, sarcina ventriculi, and an anaërobic sporing butyric-acid-forming bacillus. The results of the experiments demonstrate that dry ozone has no appreciable action on the vitality of these organisms; that prolonged exposure does not diminish the pathogenic virulence of B. tuberculosis (in sputum), B. mallei, or B. anthracis; that ozone passed through a fluid medium containing bacteria has bactericidal power; "that any purifying action which ozone may have in the economy of nature is due to the direct chemical oxidation of putrescible matter, and that it does not in any way hinder the action of bacteria, which latter are, indeed, in their own way, working toward the same end as the ozone itself in resolving dead organic matter to simple non-putrescible substances."

**Frequency of Trichinosis in the United States.**—It is commonly stated that 1 to 2 per cent. of dissecting-room subjects contain trichinæ, but most of the observations upon which this is based fail to state that systematic microscopical examinations of all cadavers were made. Believing that trichinosis occurs more commonly than is generally thought to be the case, DR. HERBERT U. WILLIAMS (*Journal of Medical Research*, July, 1901, p. 64) made an extended investigation, in the course of which 505 cadavers, not selected as being more likely to be infested with trichinæ than any others, but taken at random, were examined. The proportion of cases which yielded positive results was much larger than was anticipated, being no less than 5.34 per cent. In none of the cases was the infection very recent, as shown by encapsulation and calcification, and not one of the subjects died of trichinosis. The infections were of varying degrees of severity: sometimes very extensive and sometimes very slight. The birthplaces of the subjects included the most important countries of North America and Europe, but the number of cases was not enough to admit of accurate conclusions as to the influence of nationality upon the frequency of the disease. It is concluded that many cases of old trichinosis escape detection at autopsies, and that a large part of the published statistics are probably based on the naked-eye diagnosis, which will detect only the very severe infections.

**Influence of Formaldehyde upon the Metabolism of Children.**—Formaldehyde has come into more or less extensive use as a milk preservative, though it does not lend itself for the purposes of a general food preservative on account of its hardening influence upon certain tissues. As is the case with boric acid and borax, there is a decided conflict of testimony as to its effect upon the consumer; and since, in the absence of direct observations upon man, no conclusions can be drawn from experiments with young animals concerning the possible effects of small doses upon him, TUNNICLIFFE and ROSENHEIM (*Journal of Hygiene*, July, 1901, p. 321) concluded that the only way to gain information on this point was to make a series of metabolic experiments similar to those made in their investigations concerning the influence of boric acid and borax. These led to the following general conclusions: In doses up to 1 : 5000 in milk or 1 : 9000 in the total food and drink, formaldehyde exerts in healthy children no appreciable effects on the nitrogen or phosphorus metabolism or fat assimilation, but in larger doses or long continued it might tend to diminish phosphorus and fat assimilation, this effect being referable to an influence upon pancreatic digestion. In the above doses in healthy children it produces a retention of water in the body. In a delicate child in the above maximum doses it has a chemically measurable deleterious effect upon the nitrogen, phosphorus, and fat assimilation, again referable to an action upon the pancreatic digestion, combined with a slight intestinal irritant action, and increases the volume of urine and weight of feces. The excretion of lecithin in the feces is diminished, this effect being probably due to a stimulating action on the lecithin-splitting ferment of the pancreas. It exerts no appreciable intestinal antiseptic action, and has no influence upon the general health or well-being of children.

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